

WHAT IS CLAIMED IS:

1. A process comprising reducing a component selected from the group consisting of tungsten powders and molybdenum oxide powders, in the presence of alkali metal compounds, and preparing tungsten powder, molybdenum powder, mixtures thereof, or a carbide;
5 wherein at least two alkali metal compounds are used in a ratio so that mixed alkali tungstate or molybdate formed in an intermediate step $((\text{Li}, \text{Na}, \text{K})_2 \text{WO}_z, (\text{Li}, \text{Na}, \text{K})_2 \text{MoO}_z)$ has a melting point of less than about 550°C , wherein the value of z is from 3 to 4.
- 10 2. The process of Claim 1, wherein the component selected from the group consisting of tungsten powders and molybdenum oxide powders is subjected to a carburizing treatment.
3. The process according to Claim 1, wherein the alkali compounds are used in a total amount that ranges from about 0.2 to about
15 1.5 mole %, based on the tungsten and/or molybdenum oxide.
4. The process according to Claim 1, wherein the alkali compounds have a molar ratio of Na to Li of from about 0.9 to about 1.26 and wherein, in the further presence of a potassium compound, the potassium replaces Na and/or Li up to about 40 mole %.
- 20 5. The process according to Claim 1, wherein the alkali compounds are used in a mixed salt.
6. The process according to Claim 1, wherein the alkali compounds are selected from the group consisting of oxides, hydroxides, carbonates, tungstates and molybdates.
- 25 7. The process according to Claim 1, wherein the tungsten oxide powder is WO_3 and the molybdenum oxide powder is MoO_3 .
8. The process according to Claim 1, wherein the tungsten oxide powder is WO_2 and the molybdenum oxide powder is MoO_2 .
9. The process according to Claim 1, wherein the reducing
30 treatment is carried out in an atmosphere containing hydrogen and/or carbon monoxide and/or hydrocarbon.

10. A tungsten metal powder prepared according to Claim 1.
 11. A molybdenum metal powder prepared according to Claim 1.
 12. A tungsten carbide powder prepared according to Claim 1.
 13. A tungsten carbide powder with an average particle size of
- 5 >50 μm FSSS.
14. The tungsten carbide of Claim 13, wherein the tungsten carbide is a sintered hardmetal or an infiltrated tool.